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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,299	03/22/2004	Gyoung Il Cho	1802.03	1812
29338	7590	09/08/2005	EXAMINER	
PARK & SUTTON LLP 3255 WILSHIRE BLVD SUITE 1110 LOS ANGELES, CA 90010			COLLINS, DARRYL J	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/806,299

Applicant(s)

CHO ET AL.

Examiner

Darryl J. Collins

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-19, 22 and 27-32 is/are rejected.
- 7) ☐ Claim(s) 20, 21, 23-26 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-19, 22 and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Michelet et al in view of Boyd et al. Michelet et al teaches a zoom optical system (column 1, lines 6-9) having one or more variable focal length lenses (Figure 7, elements L2 and L3) as claimed in independent claim 1. Michelet et al further teaches a variable focal length lens made of a micromirror lens array wherein the lens array comprises a plurality of micromirrors (Figure 3) as claimed in dependent claims 28-30, the varying of the focal length of the lenses to produce an in-focus image (column 5, lines 9-18) as claimed in dependent claim 27 and unobstructed reflected light paths for the first and second variable focal length lenses (Figure 7) as claimed in dependent claim 32, but fails to teach a lens array comprising a plurality of micromirrors controlled to vary the focal length of the micromirror lens array. However, Boyd et al a variable focal length lens made of a micromirror lens array wherein the lens array comprises a plurality of micromirrors (Figure 3), controlled to change the focal length of the lens array (first paragraph, second sentence) and a mechanical structure for actuating the micromirrors positioned under the micromirrors (Section 2.1, second paragraph, first sentence) as claimed in independent claim 1. Boyd et al further teach the controlled translation and rotation of the micromirror within the lens array (first paragraph, second sentence) as claimed in dependent claims 4-6, micromirrors

Art Unit: 2873

arranged to form one or more concentric circles (Figure 3) as claimed in dependent claim 7, micromirrors of the lens array having a fan shape (Figure 2) as claimed in dependent claim 8, flat micromirrors (Section 1.3, first paragraph, fourth sentence) within a curved micromirror lens array (Section 1.2, first paragraph, third sentence) as claimed in dependent claims 9 – 11, the actuation of the micromirror lens array via electrostatic and electromagnetic forces (Section 1.2, second paragraph, second sentence and Section 2.3, first paragraph, first sentence) as claimed in dependent claims 12-14, a reflective Fresnel micromirror array (first paragraph, first sentence) as claimed in dependent claim 16, micromirrors arranged in a flat plane (Section 1.2, first paragraph, third sentence) as claimed in dependent claim 17, a micromirror array which compensates for phase errors (Section 1.1, first paragraph, first sentence) as claimed in dependent claim 19, a focused image without macroscopic mechanical movement of the zoom system (Section 1.1, first paragraph, third sentence) as claimed in dependent claim 22 and a beam splitter between the two variable focal lenses (Figure 14) as claimed in dependent claim 31. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the variable focal micro-lens array as taught by Boyd et al in the well-known zoom optical system having variable focal length lenses to reduce manufacturing cost in relation to conventional zoom lens systems.

***Allowable Subject Matter***

Claims 20, 21, 23-26 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. Although the prior art teaches zoom lens systems having one or more variable focal length lenses, the prior art fails to teach such a system wherein the variable focal length lens is a micromirror array lens wherein the micromirror lens array corrects aberrations as claimed in dependent claim 20, wherein the micromirror array corrects defects associated with paraxial imagery, a micromirror array wherein the phase condition for various wavelengths is controlled as claimed in dependent claim 23 or a micromirror having the structure as claimed in dependent claim 33.

#### ***Response to Arguments***

Applicant's arguments filed July 19, 2005 have been fully considered but they are not persuasive. The Applicant has failed to distinctly point out and claim the features for which they feel render the instant invention patentably distinct from the references cited. For example, the Applicant has argued that Boyd et al and Michelet et al fail to disclose or imply a solution to correct aberration caused in the process of setting up the zoom system nor do they teach a compact zoom system, but the Applicant has also failed to positively recite these limitations in the claimed subject matter. The Applicant has argued limitations appearing in the Specification that do not appear as claimed subject matter. Although the Applicant has cited various references in the Specification for new features of the present invention (see Applicant's Remarks, page 4), the limitations do not appear in the claimed subject matter.

*Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darryl J. Collins whose telephone number is 571-272-2325. The examiner can normally be reached on 6:30 - 5:00 Monday - Thursday.

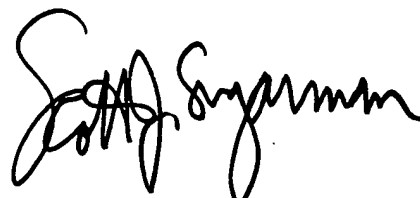
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



djc



**Scott J. Sugarman**  
**Primary Examiner**